E000P-971083
Date: 05/01/97

MODIFICATION REVIEW

for

BEAMLINE
PERSONNEL SAFETY SYSTEM

ARGONNE NATIONAL LABORATORY
ADVANCED PHOTON SOURCE
EXPERIMENTAL FACILITIES

E000P-971083

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PSS Change Request
1 May 1997

1. PSS Change

   Chain A:

   Add a serious communication failure fault to the PSS Chain A program logic for each remote I/O block. This fault will perform in the same manner as all serious faults implemented in the Chain A code. It will not turn off the Storage Ring permit. It will close all shutters and prohibit them from reopening. It will not allow operation of automatic door open push buttons. It will not allow operation of the unlock push buttons of manual doors. It will require the operation Major/Serious fault reset key to return to normal operation after the cause for the fault has been corrected.

   Chain B:

   Add the equivalent detection mechanism to the Chain B program logic. The detection of a communication fault in Chain B remote I/O will stop all processing of the Chain B program and turn off all shutter permits. The Storage Ring permit will remain on. Chain B will not resume normal operation until the fault condition has been corrected and the Major/Serious fault reset key is operated to reset the program operation.

2. Reasons for the PSS Change.

   The addition of this group of faults will greatly enhance the operation of the PSS software by insuring that Chain A and Chain B will not operate with stale input data. The safety envelope is further enhanced by detecting these faults and causing the Chain(s) to effect an orderly shutdown of the affected Beamline. Independence between PSS Chain A and Chain B is not affected by this change.

3. Extent of the PSS Change

   This change will affect all Beamline code written or modified on or after 1 May 1997.

4. Method of Implementation

   The changes will be applied using the existing Software Change Request mechanism as defined in the Software Configuration Management Procedures document E000P-921130-01 dated 03/25/96 for the Interlock Systems and Instrumentation Group.